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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,153	08/21/2001	Kunihiko Tomita	212847US2	6575

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EXAMINER

LEE, SUSAN SHUK YIN

ART UNIT PAPER NUMBER

2852

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/933,153

Applicant(s)

TOMITA ET AL

Examin r

Susan S. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-8,10-12,14,16-33,36-38,40-42,44,46-48,51-53,55-57,59 and 61-75 is/are rejected.
- 7) ☒ Claim(s) 4,5,9,13,15,34,35,39,43,45,49,50,54,58 and 60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Specification

The abstract of the disclosure is objected to because it does not describe the invention that is now claimed. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

Claims 34, 39, and 43-45 are objected to because of the following informalities:

As to claim 34, line 2, "said energizing step" lacks antecedent basis.

As to claim 39, lines 2-3, "said energizing step" lacks antecedent basis.

As to claim 43, lines 1-2, "said controlling step" lacks antecedent basis.

As to claim 44, lines 1-2, "said controlling step" lacks antecedent basis.

As to claim 45, lines 1-2, "said controlling step" lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-30 and 61-75 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 16-30, the word "means" is preceded by the word(s) "endless belt", line 6, claim 16; and "pressure roller", line 8, claim 16, and in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Regarding claims 61-75, the word "means" is preceded by the word(s) "endless belt", line 7, claim 61; and "pressure roller", line 9, claim 61 and in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6-8, 12, 16, 18, 21-23, 27, 31, 33, 36-38, 42, 46, 48, 51-53, 57, 61, 63, 66-68, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanari et al. (6,423,941) in view of Ooyumi (Japan, 728).

Kanari et al. discloses a fixing apparatus comprising a heater 12 with two heat generating members 12a, 12b or in another embodiment h1 and h2 (note column 16, lines 46-57). The heater has a line shape orthogonal to a direction in which a recording material P carrying an unfixed toner image T (note Figs. 2, 12A, and 12B). The fixing apparatus further comprises an endless belt or a film 10 of an endless belt shape with an inner surface that slides over a surface of the heater; control 21, 22 controls the heater; and a pressure roller 11 for forming a fixing nip with the film 10 when recording material P is moved through the nip, thus heating, fusing, and fixing the unfixed toner image T. The width of the heating generating members 12a, 12b is 3 mm. A guide member 13 reads on the instant invention's "mechanism to cause the endless belt to hold tightly the toner image and the recording sheet together until the toner image is fixed". Note column 4, line 29 – column 8, line 57.

Kanari et al. differs from the instant invention by not disclosing a heater controller configured to change amount of heat produced by the heater in accordance with at least one of a size and thickness of the different sized toner images on the recording sheet.

Ooyumi discloses an image forming device with image data that is read by an estimation circuit 41. The number of edges surrounding the read image data is

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detected by an edge detection circuit in the estimation circuit 41. The transfer toner quantity previously set for the number of image data is corrected in accordance with the number of edges. The transfer toner quantity by the amount of one image is calculated while properly correcting the transfer toner quantity in such a way that the fixing device 40 is controlled at a temperature or a speed selected based on the toner quantity. This system provides a good image without deteriorating the fixation of the image even when the line width of the image is different. This reads on the instant invention's heater controller configured to change an amount of heat produced by the heater in accordance with at least one of a size and a thickness of the different sized toner images on the recording sheet. Note abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Kanari et al. with that of Ooyumi to reduce power consumption and to obtain a good image as disclosed by Ooyumi (note abstract)

Claims 2, 17, 32, 47, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanari et al. (6,423,941) in view of Ooyumi (Japan, 728) as applied to claims 1, 3, 6-8, 12, 16, 18, 21-23, 27, 31, 33, 36-38, 42, 46, 48, 51-53, 57, 61, 63, 66-68, and 72 above, and further in view of Hagi et al. (5,707,769).

Kanari et al. as modified by Ooyumi, as discussed above, differ from the instant invention by not disclosing a toner that includes a resin and has properties of softening

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or melting point in a range between 50°C and 160°C and a viscosity in a range between 10 c poise and 10^{13} c poise under a temperature above the softening or melting point.

Hagi et al. discloses a toner that comprises a resin with a softening point of 90°C to 110°C and a melt viscosity of $1 \times 10^5 - 5 \times 10^6$ poise. Note column 21, lines 53-60.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Kanari et al., as modified by Ooyumi, with that of Hagi et al. by using a toner of Hagi et al. so that contamination of the heating roller can be reduced as disclosed by Hagi et al. (note column 3, lines 18-25).

Claims 10, 11, 25, 26, 40, 41, 55, 56, 70, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanari et al. (6,423,941) in view of Ooyumi (Japan, 015) as applied to claims 1, 3, 6-8, 12, 16, 18, 21-23, 27, 31, 33, 36-38, 46, 48, 51-53, 57, 61, 63, 66-68, and 72 above, and further in view of Koh et al. (5,241,155).

Kanari et al., as modified by Ooyumi, differ from the instant invention by not disclosing a cooling mechanism for cooling the toner image after the toner image is fixed with heat by the heater.

Koh et al. discloses an image fixing apparatus with a heater 30, a fixing film 34 and a separation roller 37. The fused toner image Tb on a transfer material sheet P is cooled and solidified into a solidified toner image Tc by the time when the toner image reaches the separation roller 37. Note column 12, lines 23-30.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Kanari et al., as modified by Ooyumi,

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with that of Koh et al. so that the fixed toner images can be cooled before the recording sheet exits out an ejection tray.

Claims 14, 29, 44, 59, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanari et al. (6,423,941) in view of Ooyumi (Japan, 728) as applied to claims 1, 3, 6-8, 12, 16, 18, 21-23, 27, 31, 33, 36-38, 42, 46, 48, 51-53, 57, 61, 63, 66-68, and 72 above, and further in view of Okuda (Japan, 507).

Kanari et al., as modified by Ooyumi, differ from the instant invention by not disclosing a heater controller that energizes a heater during a time when a region of the toner image in the recording sheet is brought close to the heater.

Okuda discloses a fixing device with a sensor 50 that is arranged to detect the tip of a recording material 12 carrying an unfixed powder toner image 11 on the upper surface. When the detection occurs, then the rotation of the fixing film 7 is started and the voltage is impressed on a thermistor 4. Next, the power is supplied to a heater 1.

Note abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Kanari et al., as modified by Ooyumi, with that of Okuda so that the life of the fixing device can be prolonged.

Allowable Subject Matter

Claims 4, 5, 9, 13, 15, 34, 35, 39, 43, 45, 49, 50, 54, 58, and 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Claims 19, 20, 24, 28, 30, 64, 65, 69, 73, and 75 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-3, 6-8, 10-12, 14, 16-18, 21-23, 25-27, 29, 31-33, 36-38, 40, 41, 43-48, 51-53, 55-59, 61-63, 66-68, 70-72, and 74 have been considered but are moot in view of the new ground(s) of rejection.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan S. Lee whose telephone number is 703-308-2138. The examiner can normally be reached on Mon. - Fri., 10:30-8:00, Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Art Grimley can be reached on 703-308-1373. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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Susan S. Lee
Primary Examiner
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July 23, 2003